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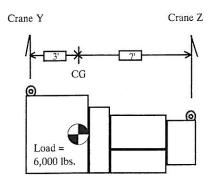
TECHNICAL NEWS

Load Turning

When using two hoists or cranes to turn a load 90 degrees, the location of the load's center-of-gravity (CG) is the key in determining how much weight is carried by each hook.

The horizontal distances between the crane hooks and the CG create the proportion of load distributed between the two hooks.

We can find the approximate loading per hook by finding the ratio of the distances of the hooks to the load's CG, and then reverse the positions of the ratios [an inverse (Inv)].



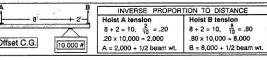
Percentage of weight to Crane Y? 3+7=10 3/10=.30 Inv of .30=.70 Approx. weight in lbs. on Crane Y? $.70 \times 6,000 = 4,200$ lbs. Percentage of weight to Crane Z? 3+7=10 7/10=.70 Inv of .70=.30 Approx. weight in lbs. on Crane Z? $.30 \times 6,000 = 1,800$ lbs.

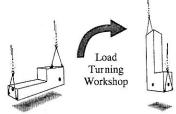
If the load rotates due to one crane hoisting faster than the other, the actual assigned weight will change accordingly. If Crane Y in the above example were to raise faster, the tilting action would cause the

CG to be more "in-line" with Crane Y's pad eye. A rigger can generally expect that the pad eye or pick point closest to the CG will be carrying a greater portion of the load. Remembering our last example: Y's pad eye is closer than Z's, and Y is carrying 4,200 lbs. vs. Z at 1,800 lbs.

Try your hand at determining the distribution of the load's weight between the following four samples viewed during a turning sequence.

Part of WRRC's Rigger's Reference Card (upper right) may help during this workshop.





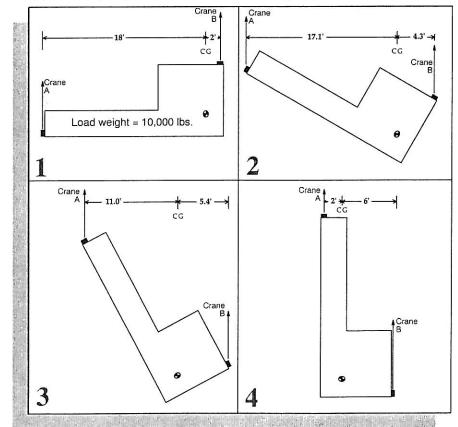
Please complete the following: Position 1

Loading to A = ____B = ____ Position 2

Loading to A = _____B = _____

Loading to A = ____B = ____ Position 4

Loading to A =____B =___



Bonus question: Between which Positions (1&2) (2&3) or (3&4) will the loading become equalized between the two cranes?

CLIENT NEWS

Martin Marietta Energy Sys.

The ironworkers and riggers based at the K-25 Plant in Oak Ridge, TN DOE facility participated in two 4-day Master Rigger Courses during August, coordinated by Mr. Bob Gouldy. Two days of handson activities capped off the instructional workshops which helped lay the foundation of the program.

Winching, jacking & rolling with steel & air systems, load turning, and



tight confines were but a few of the challenges offered to the crews. The participants experimented with new types of rigging gear and load weight measuring devices from WRRC's Mobile Learning Center.

Boise Cascade

Maintenance personnel from B.C.'s West Tacoma Mill attended a 3-day Master Rigger Course conducted at the request of Mr. Richard Lalonde. This program was the "next generation" of skills training for many of the participants who had previously attended WRRC's

Comprehensive Rigging Course.

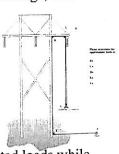
The Master Rigger

Course is designed to help client crews enhance their rigging skills using state-of-the-art equipment and techniques available through WRRC's Mobile Learning Center. The attendees work in small teams and approach rigging tasks using efficient procedures with a constant emphasis towards safety. Contact WRRC today about this program.

Martin Marietta Energy Sys.

Two 2-day Electric Utility Rigging programs were conducted for Mr. John Clement and the Y-12 utility line crews in Oak Ridge, TN.

Hands-on workshops using dynamometers helped reinforce the classroom workshops, which required the lineman to



confirm anticipated loads while dead-ending and cross-arm loading.

Pacific Power & Light

A 2-day Electric Utility Rigging program was conducted for Mr. Steve Wirth and his electric utility line crews in Rawlins, WY. Handson workshops addressing deadending and cross-arm loading, along with substation maintenance rigging, helped reinforce the classroom workshops.

Montana Power Co.

WRRC's Mr. Bill Wall conducted two 2-day Comprehensive Rigging Courses at the request of M.P.'s Mr. Hank Coffin. Maintenance crews completed workshop and field exercises which included load weight estimation, load control and rigging techniques.

Basin Electric Power Co-op.

Mr. Lib Gustin BEPCo-op's Training & Safety Supv. requested WRRC conduct four 2-day rigging programs for plant maintenance crews. Participants used bridge and mobile cranes to complete the hands-on rigging assignments. Eight different loads challenged the riggers to use all their existing and newly-acquired rigging knowledge.

Sverdrup Corp.

A Crane and Rigging Management Course was conducted for Sverdrup planners, estimators, and safety & construction managers who help oversee projects throughout the U.S. The St. Louis-based Director of Safety, Mr. Jim Stone, requested a short course concerning crane dynamics, load chart interpretation, load control and safe rigging techniques, with a review of rigger and operator checklists.

Consumers Power Co.

Broken wires and crushed web fibers were only two of the dozens of inspection criteria discussed during the 3-day Rigging Gear Inspection Program conducted at the Muskegan, MI plant. C.P.'s Mr. Ron Weselo requested the course for inspectors from numerous plant locations.

Chevron Products

Mr. Jack Miller at Chevron's Philadelphia, PA refinery requested five 1-day maintenance rigging courses to be presented during the month of October. WRRC's Russ Donaldson presented workshops conducive to millwright and pipefitter-type rigging.

The work-shops addressed load drifting with chain falls and placing loads with mobile cranes into heavily obstructed areas.

The Professional Rigger is a quarterly publication of Wire Rope & Rigging Consultants, Inc. It is distributed to those whose occupations require the safe and effective use of lifting and rigging equipment. For more information contact: Editor, The Professional Rigger, PO Box 728, Vancouver, WA 98666 (206) 256-5730.

WRRC NEWS

Rigging Conference 1994 Las Vegas, here we come!!

With the huge success of Rigging Conference 1993 behind us, we are excited about RC'94, which, you guessed it, will be held in Las Vegas. (Please see enclosed flyer.) Conference attendees participate in workshops addressing rigging applications, rigging gear inspection, load weight estimation, wire rope applications, rigging and crane accident case studies, master rigger session, train-the-trainer roundtable, and crane load charts.

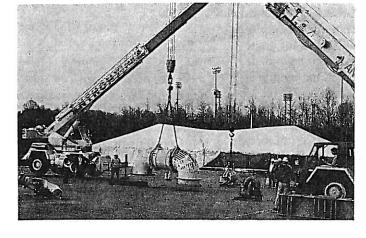
WRRC's Mobile Learning Center is

used during the
Hands-On Workshop, which includes mobile and
gantry cranes, crane
and rigging simulastructure, rigging

tors, drifting structure, rigging towers, jacking and rolling, and new material-handling devices.

The final conference event is the Rigging Rodeo, with everyone participating. The events include team competition in moving loads (load control), rigging gear inspections, hand-signals, crane load charts, accident investigation, rigging lift plans and knot tying & splicing. Call today to register, as seating is limited to the first 160 paid participants.

Rigging Conference 1994



WRRC's Rigger's Reference Card

Over 70,000 cards sold in 4 years! To help celebrate,

we are offering a 10% discount for any card order received before January 30th, 1994. Order now with free Quiz & Answer Key!



WRRC's Certified Inspector Program

Don't miss out . . .
Our 1994 CIP Courses are rapidly filling. They will take place
March 8-10, and Sept. 13-15 1994 in Vancouver, WA. (Please see the enclosed CIP Flyer for more information.) Call WRRC today to register and reserve your place!

This course addresses inspection of wire rope, wire rope slings, synthetic web slings, alloy steel chain slings, below-the-hook lifting devices, and rigging gear/testing.

The instructional format is based on OSHA CFR 29 1910, ASME B 30 series, ASTM A-391, and ASTM E-4. Participants are required to pass written tests and hands-on field inspections to complete each course section.

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Items Available from our Rigger's Tool Crib

HANDBOOK FOR RIGGERS \$13/ea. Mobile Craning Today Manual \$35/ea





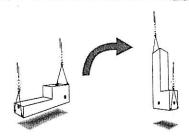


Нат \$8.45/ea.

For ordering information, please call WRRC.

Load Turning Workshop

[from pg. 1]



Answers are in pounds:

Position 1

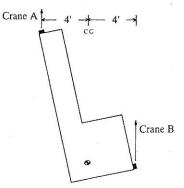
Loading to A = 1,000 B = 9,000 Position 2

Loading to A = 2,000 B = 8,000 Position 3

Loading to A = 3,300 B = 6,700 Position 4

Loading to A = 7,500 B = 2,500

Bonus (question) answer: The loading will be equalized between Positions (3&4), more exactly when the CG is 4' from Crane A's hoist line and 4' from Crane B's hoist line.



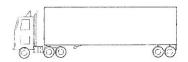


MEWS

Crane & Equipment Training, Inc., PO Box 728, Vancouver, WA 98666 • Bus.(206)256-5832

EQUIPMENT OPERATION

Backhoes, loaders and boom trucks were the main subjects of instruction during the Bureau of Reclamation's - Yellow Tail Dam training course. BoR's Mr. Harold Hergenrider requested the November CET Heavy Equipment Operator Program for maintenance crews who work at the Montana property.



A 5-day Commercial Driver's License (CDL) skills enhancement course was presented by CET's Warren Mangel for Pacific Gas Transmission. The course covered pre-trip inspection, simple maintenance, driving regulations and vehicle operations. This program is excellent for those who are preparing for their CDL exams.

MOBILE & OVERHEAD CRANES

A 4-day Mobile Crane Operator course was conducted for power plant employees working at Pacific Power & Light's WYODAK plant in Gillette, WY. PP&L's coordinator, Mr. Baird Langworthy, requested the instruction and evaluation program for those who operate the plant's 2 Grove cranes.

CET's Crane Simulator demonstrates dynamic loading, swingout, retracted outriggers and much more. Ask about its use for your future program. CET's Russ Donaldson has provided Forklift, Mobile Crane, Rigging and Safety Management courses for 80+general and subcontractors at the INTEL project in Rio Rancho, NM. Hoffman Construction's Mr. Darrell French has contracted CET for future courses, to help ensure that all on-site equipment operators are fully trained and receive their qualified status.

Boise Cascade's Mr. Tim Heim requested a 5-day Mobile Crane course for Medford, OR crane operators. The course adhered to the criteria outlined in the State of Oregon codes requiring documented training for operators. Classroom workshops and exams were followed by a series of hands-on evaluations.

A 3-day Boom Truck course helped qualify operators working for the Port of Tacoma. Mr. Dale Bamford requested the program for 11 operators.

Idaho Power Co. requested new and veteran operator training and qualification for crane operators assigned to dam facilities and the mobile construction crews. IPCo's Mr. Leon Swenson coordinated the five-day event, held at the Ox Bow Dam. A mix of mobile hydraulic, lattice boom and overhead bridge and gantry cranes were in the collection of qualifying equipment.

With the State of Oregon's Crane Operator Qualification Program in its third year, many clients are asking for re-qualification of their operators. One such client was Weyerhaeuser Paper Co. in Springfield, OR. Their operators had completed CET's program in 1990 and were in need of review. All the participants successfully completed the written and hands-on evaluation.

Approximately 15% of those who attend a CET instructional program and attempt to be qualified to the State of Oregon

standards, do
not qualify on
their first time
through.
Those who
don't pass can
pursue
additional
study for the
written
portions and

request that their employers give them supervised "no-load" seat time to gain experience on their qualifying crane(s). The employer might decide to have a non-qualified operator perform "live-load" lifts under the supervision of a qualified operator.

Pacific Gas Transmission sponsored a series of short courses for those who operate mobile and bridge-type cranes. PGT Safety & Training Coordinator, Mr. David Young, requested that CET provide this program for employees working in the Washington and Oregon areas.